# Forestland Interpretations

Forestland interpretations are important to good management. The management of trees begins with an understanding of the soil where they grow or are to be grown. Some soils are very suitable for growing wood crops; others barely support tree cover. Different tree species may vary in production on the same soil.

Forestland interpretations should be used to assist land users in planning, installing, and maintaining forestland management systems.

## Forest Management and Productivity

The Forestland Management and Productivity tables presents information about suitable for producing timber for each soil map unit. Management concerns, which include hand planting, mechanical planting, use of harvesting equipment, mechanical site preparation (surface), roads (natural surface), erosion on roads and trails, off-road/trail erosion, soil rutting, log landings, seedling survival, are listed by ratings of:

- Not Limited (0.00)
- Slightly Limited (0.01 to 0.30)
- Moderately Limited (0.31 to 0.60)
- Limited (0.61 to 0.99)
- Very Limited (1.00)

Information on potential productivity includes plant competition, common trees, site index, productivity class, and trees to plant.

### Management Concerns

**PLANT COMPETITION** - A rating of slight indicates little or no competition from other plants; moderate indicates that plant competition is expected to hinder the development of the fully stocked stand of desirable trees; and severe means that plant competition is expected to prevent the establishment of a desirable stand unless the site is intensively prepared, weeded, or otherwise managed for the control of undesirable plants.

**POTENTIAL PRODUCTIVITY -** This is discussed under the ordination class symbol.

**COMMON TREES** - Trees that generally occur on the soil are listed regardless of economic importance.

**SITE INDEX AND PRODUCTIVITY CLASS** - These are discussed under ordination class symbol.

**TREES TO PLANT** - Trees that are suitable for commercial wood production and that are adapted to the soil.

**HAND PLANTING** – ratings are based on slope, depth to a restrictive layer, content of sand, plasticity index, rock fragments on or below the surface, a water table, and ponding. Ratings indicate the expected difficulty of hand planting, which includes the proper placement of root systems of tree seedlings to a depth of up to 12 inches, using standard hand planting tools. It is assumed that necessary site preparation is completed before seedlings are planted.

**MECHANICAL PLANTING** – ratings are based on slope, depth to a restrictive layer, content of sand, plasticity index, rock fragments on or below the surface, a water table, and ponding. Ratings indicate the expected difficulty using a mechanical planter, which includes proper placement of root systems of tree seedlings to a depth up to 12 inches. It is assumed that necessary site preparation is completed before seedlings are planted.

**USE OF HARVEST EQUIPMENT** – ratings are based on slope, rock fragments on the surface, plasticity index, content of sand, surface texture, a water table, and ponding. Ratings indicate the suitability for operating harvest equipment for off –road transport or harvest of logs and/or wood products by ground-based wheeled or tracked equipment.

**MECHANICAL SITE PREPARATION (SURFACE)** – ratings are based on slope, depth to a restrictive layer, plasticity index, rock fragments on or below the surface, a water table, and ponding. The part of the soil from the surface to a depth of about 12 inches is considered in the ratings. Ratings indicate the suitability of using surface-altering soil tillage equipment to prepare the site for planting or seeding.

**ROADS (NATURAL SURFACE)** – ratings are based on slope, rock fragments on the surface, plasticity index, content of sand, surface texture, a water table, ponding, flooding, and the hazard of soil slippage. The ratings indicate the suitability for using the natural surface of the soil for roads on which trucks transport logs and other wood products from the site.

**EROSION** (**ROAD/TRAIL**) – ratings are based on the soil erodibility factor K, slope, and content of rock fragments. The ratings apply to unsurfaced roads and trails.

**EROSION (OFF-ROAD/OFF-TRAIL)** – ratings are based on slope and on soil erodibility factor K. The soil loss is caused by sheet or rill erosion in off-road or off-trail areas where 50 to 75 percent of the surface has been exposed by logging, grazing, mining, or other kinds of disturbance.

**SOIL RUTTING** – ratings are based on a water table, rock fragments on or below the surface, surface texture, depth to a restrictive layer, and slope. Ratings indicate the hazard or risk of ruts in the uppermost soil surface layers by operation of forest equipment. Soil displacement and puddling (soil deformation and compaction) may occur simultaneously with rutting.

**LOG LANDINGS** – ratings are based on slope, rock fragments on the surface, plasticity index, content of sand, surface texture, a water table, ponding, flooding, and the hazard of soil slippage. Ratings indicate the suitability of the soil at the forest site to serve as a log landing and allows the efficient and effective use of equipment for the temporary storage and handling of logs.

**SEEDLING SURVIVAL** – ratings are based on flooding, ponding, a water table, content of lime, reaction, salinity, available water capacity, soil moisture regime, soil temperature regime, aspect, and slope. Ratings indicate the impact of soil, physiographic, and climatic conditions on the survivability of newly established tree seedlings.

See the National Forestry Manual, Subpart B for criteria used in rating management concerns.

This subsection includes:

• (a) Forest Management (one or two tables)

Map symbol and soil name	Hand planting		   Mechanical planti 	ng	  Use of harvesting equ:   	ipment	  Mechanical site prepa:   (surface)	ration	   Roads (natural surf	ace)
	Rating class and limiting features	Value	Rating class and limiting features	Value   	Rating class and limiting features	Value   	Rating class and limiting features	Value   	Rating class and limiting features	Value
AaB2: Adair	  Not limited 		    Not limited     	           	  Moderately limited  ~low strength  (moderately limited)  ~seasonal wetness  (slightly limited)	    0.50    0.20	    Slightly limited  ~seasonal wetness   (slightly limited) 	      0.20     	  Moderately limited  ~low strength  (moderately limited)  ~seasonal wetness  (slightly limited)	    0.50    0.20
AsC: Adair, 49	  Not limited   		  Slightly limited  ~slope   (slightly limited) 	    0.20       	  Moderately limited  ~low strength   (moderately limited)  ~seasonal wetness   (slightly limited)	  0.50    0.20 	  Slightly limited  ~seasonal wetness   (slightly limited) 	    0.20       	  Moderately limited  ~low strength   (moderately limited)  ~seasonal wetness   (slightly limited)  ~slope   (slightly limited)	  0.50    0.20    0.15
Shelby	Not limited		Slightly limited  ~slope   (slightly limited)	  0.20   	  Moderately limited  ~low strength   (moderately limited) 	    0.50   	  Not limited     	         	  Moderately limited  ~low strength   (moderately limited)  ~slope   (slightly limited)	  0.50    0.15
AsC2: Adair	  Not limited 		  Slightly limited  ~slope   (slightly limited) 	  0.20     	  Moderately limited  ~low strength   (moderately limited)  ~seasonal wetness   (slightly limited)	  0.50    0.20 	  Slightly limited  ~seasonal wetness   (slightly limited) 	  0.20       	   Moderately limited   ~low strength   (moderately limited)   ~seasonal wetness   (slightly limited)   ~slope   (slightly limited)	  0.50    0.20    0.15
Shelby	Moderately limited  ~stickiness (surface)   (moderately limited) 		   Moderately limited   ~stickiness (surface)   (moderately limited)   ~slope   (slightly limited) 	  0.50    0.20 	   Moderately limited   ~low strength   (moderately limited)   ~stickiness (surface)   (moderately limited) 	  0.50  0.50  0.50	   Moderately limited   ~stickiness (surface)   (moderately limited)   	  0.50       	   Moderately limited   ~low strength   (moderately limited)   ~stickiness (surface)   (moderately limited)   ~slope   (slightly limited)	0.50

Map symbol and soil name	   Hand planting 		   Mechanical planti   	ng	  Use of harvesting equ   	ipment	  Mechanical site prepa:   (surface)	ration	   Roads (natural surf 	ace)
	Rating class and limiting features	Value   	Rating class and limiting features	Value   	Rating class and limiting features	Value   	Rating class and limiting features	Value   	Rating class and limiting features	Value
AsC3: Adair	  Not limited 		  Slightly limited  ~slope   (slightly limited) 	      0.20     	  Moderately limited  ~low strength   (moderately limited)  ~seasonal wetness   (slightly limited)	      0.50    0.20	  Slightly limited  ~seasonal wetness   (slightly limited) 	       0.20       	  Moderately limited  ~low strength   (moderately limited)  ~seasonal wetness   (slightly limited)  ~slope   (slightly limited)	    0.50    0.20    0.15
Shelby	Moderately limited   ~stickiness (surface)   (moderately limited)	  0.50     	Moderately limited  ~stickiness (surface)   (moderately limited)  ~slope   (slightly limited)	  0.50    0.20 	   Moderately limited   ~low strength   (moderately limited)   ~stickiness (surface)   (moderately limited)	  0.50    0.50 	  Moderately limited  ~stickiness (surface)   (moderately limited)   	  0.50       	   Moderately limited   ~low strength   (moderately limited)   ~stickiness (surface)   (moderately limited)   ~slope   (slightly limited)	0.50
Au: Humeston	  Moderately limited  ~seasonal wetness   (moderately limited)	  0.60     	  Moderately limited  ~seasonal wetness   (moderately limited) 	    0.60       	  Limited  ~seasonal wetness   (limited)  ~low strength   (moderately limited)	  0.91    0.50 	  Limited  ~seasonal wetness   (limited) 	    0.91       	  Limited  ~seasonal wetness   (limited)  ~flooding   (moderately limited)  ~low strength   (moderately limited)	0.50
EbA: Edina	  Not limited 		  Not limited     	         	  Moderately limited  ~low strength   (moderately limited)  ~seasonal wetness   (moderately limited)	    0.50    0.45	  Moderately limited  ~seasonal wetness   (moderately limited) 	    0.45     	   Moderately limited   ~low strength   (moderately limited)   ~seasonal wetness   (moderately limited)	0.45

Map symbol and soil name	   Hand planting 		   Mechanical planti   	ng	  Use of harvesting equ 	ipment	  Mechanical site prepa:   (surface)	ration	   Roads (natural surf 	ace)
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
GaD2: Gara	  Moderately limited  ~stickiness (surface)   (moderately limited)	    0.50     	   Moderately limited  ~stickiness (surface)   (moderately limited)  ~slope   (moderately limited)		  Moderately limited  ~low strength   (moderately limited)  ~stickiness (surface)   (moderately limited)		  Moderately limited  ~stickiness (surface)   (moderately limited) 	      0.50       	Limited  ~slope   (limited)  ~low strength   (moderately limited)  ~stickiness (surface)   (moderately limited)	0.50
GaE2: Gara	   Moderately limited   ~stickiness (surface)   (moderately limited)   ~slope   (slightly limited)	0.50    0.04 	  Limited  ~slope   (limited)  ~stickiness (surface)   (moderately limited)	ĺ	   Moderately limited   ~low strength   (moderately limited)   ~stickiness (surface)   (moderately limited)   ~slope   (slightly limited)	0.50	   Moderately limited   ~stickiness (surface)   (moderately limited)   ~slope   (slightly limited)	  0.50    0.15 	  Very limited  ~slope   (very limited)  ~low strength   (moderately limited)  ~stickiness (surface)   (moderately limited)	0.50
GaF: Gara	  Slightly limited  ~slope   (slightly limited)	0.18	  Very limited  ~slope   (very limited) 		Limited  -slope   (limited)  -low strength   (moderately limited)	  0.72    0.50	  Limited  ~slope   (limited) 	    0.72     	  Very limited  ~slope   (very limited)  ~low strength   (moderately limited)	1.00
GrF3: Gara	Moderately limited   ~stickiness (surface)   (moderately limited)   ~slope   (slightly limited)	  0.50    0.11   	  Limited  ~slope   (limited)  ~stickiness (surface)   (moderately limited)	  0.91    0.50 	   Moderately limited   ~low strength   (moderately limited)   ~stickiness (surface)   (moderately limited)   ~slope   (moderately limited)	0.50	   Moderately limited   ~stickiness (surface)   (moderately limited)   ~slope   (moderately limited)	  0.50    0.48   	  very limited  ~slope   (very limited)  ~low strength   (moderately limited)  ~stickiness (surface)   (moderately limited)	0.50

Map symbol and soil name	Hand planting		   Mechanical plant   	ing	  Use of harvesting equ 	ipment	Mechanical site prepa   (surface)	aration	   Roads (natural surf 	Eace)
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value   	Rating class and limiting features	Value	Rating class and limiting features	Value
GsB: Grundy	  Not limited		  Not limited   		   Moderately limited   ~low strength   (moderately limited)   ~seasonal wetness   (slightly limited)	0.50	  Slightly limited  ~seasonal wetness   (slightly limited)	0.15	  Moderately limited  ~low strength  (moderately limited)  ~seasonal wetness   (slightly limited)	    0.50    0.15
GsB2: Grundy	  Not limited		  Not limited   		  Moderately limited  ~low strength   (moderately limited)  ~seasonal wetness   (slightly limited)	  0.50    0.15	  Slightly limited  ~seasonal wetness   (slightly limited) 	0.15	  Moderately limited  ~low strength   (moderately limited)  ~seasonal wetness   (slightly limited)	  0.50    0.15
GuA: Grundy	  Not limited		  Not limited   		  Moderately limited  ~low strength   (moderately limited)  ~seasonal wetness   (slightly limited)	  0.50    0.15 	  Slightly limited  ~seasonal wetness   (slightly limited)	0.15	  Moderately limited  ~low strength   (moderately limited)  ~seasonal wetness   (slightly limited)	  0.50    0.15
GuB: Grundy	  Not limited 		  Not limited   		  Moderately limited  ~low strength   (moderately limited)  ~seasonal wetness   (slightly limited)	  0.50    0.15	  Slightly limited  ~seasonal wetness   (slightly limited)	0.15	  Moderately limited  ~low strength   (moderately limited)  ~seasonal wetness   (slightly limited)	  0.50    0.15
GuC2: Grundy	  - Not limited 		  Slightly limited  ~slope   (slightly limited) 	0.20	  Moderately limited  ~low strength   (moderately limited)  ~seasonal wetness   (slightly limited)	  0.50    0.15 	  Slightly limited  ~seasonal wetness   (slightly limited) 	0.15	  Moderately limited  ~low strength   (moderately limited)  ~slope   (slightly limited)  ~seasonal wetness   (slightly limited)	  0.50    0.15    0.15

Map symbol and soil name	Hand planting		Mechanical plant 	ing	Use of harvesting equ	ipment	Mechanical site prepared (surface)	aration	Roads (natural surf	ace)
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Kc: Kennebec	  Not limited 		    Not limited   		  Moderately limited  ~low strength   (moderately limited)	0.50	    Not limited   		  Moderately limited  ~flooding   (moderately limited)  ~low strength   (moderately limited)	0.50
KeC: Keswick	Not limited		  Slightly limited  ~slope   (slightly limited) 	0.20	  Moderately limited  ~low strength   (moderately limited)  ~seasonal wetness   (slightly limited)	  0.50    0.20 	  Slightly limited  ~seasonal wetness   (slightly limited)	0.20	   Moderately limited   ~low strength   (moderately limited)   ~seasonal wetness   (slightly limited)   ~slope   (slightly limited)	  0.50  0.20    0.15
KeC2: Keswick	  Not limited 		  Slightly limited  ~slope   (slightly limited) 	0.20	  Moderately limited  ~low strength   (moderately limited)  ~seasonal wetness   (slightly limited)	  0.50    0.20 	  Slightly limited  ~seasonal wetness   (slightly limited) 	0.20	   Moderately limited   ~low strength   (moderately limited)   ~seasonal wetness   (slightly limited)   ~slope   (slightly limited)	0.50
KkC2: Keswick	Not limited		  Slightly limited  ~slope   (slightly limited) 	0.20	  Moderately limited  ~low strength   (moderately limited)  ~seasonal wetness   (slightly limited)	  0.50    0.20 	  Slightly limited  ~seasonal wetness   (slightly limited)	0.20	   Moderately limited   ~low strength   (moderately limited)   ~seasonal wetness   (slightly limited)   ~slope   (slightly limited)	  0.50    0.20    0.15

Map symbol and soil name	Hand planting		   Mechanical planti   	ng	  Use of harvesting equ   	ipment	  Mechanical site prepa   (surface)	ration	   Roads (natural surf   	ace)
	Rating class and limiting features	Value   	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
KkD2: Keswick	  Not limited 		  Moderately limited  ~slope   (moderately limited)   	      0.47       	   Moderately limited   ~low strength   (moderately limited)   ~seasonal wetness   (slightly limited) 	      0.50    0.20   	  Slightly limited  ~seasonal wetness   (slightly limited)   	      0.20       	Limited  ~slope   (limited)  ~low strength   (moderately limited)  ~seasonal wetness   (slightly limited)	0.76
KsC3: Keswick	  Moderately limited  ~stickiness (surface)   (moderately limited) 		  Moderately limited  ~stickiness (surface)   (moderately limited)  ~slope   (slightly limited)		   Moderately limited   ~low strength   (moderately limited)   ~stickiness (surface)   (moderately limited)   ~seasonal wetness   (slightly limited)		  Moderately limited  ~stickiness (surface)   (moderately limited)  ~seasonal wetness   (slightly limited) 	    0.50    0.20   	   Moderately limited   ~low strength   (moderately limited)   ~stickiness (surface   (moderately limited)   ~seasonal wetness   (slightly limited)	0.50
KvC3: Keswick	Moderately limited  ~stickiness (surface)   (moderately limited)	    0.50       	  Moderately limited  ~stickiness (surface)   (moderately limited)  ~slope   (slightly limited)	1	Moderately limited   ~low strength   (moderately limited)   ~stickiness (surface)   (moderately limited)   ~seasonal wetness   (slightly limited)		  Moderately limited  ~stickiness (surface)   (moderately limited)  ~seasonal wetness   (slightly limited)	1	  Moderately limited  ~low strength   (moderately limited)  ~stickiness (surface)   (moderately limited)  ~seasonal wetness   (slightly limited)	) 0.50
KvD3: Keswick	   Moderately limited  ~stickiness (surface)   (moderately limited) 	    0.50       	Moderately limited  ~stickiness (surface)   (moderately limited)  ~slope   (moderately limited)	1	   Moderately limited   ~low strength   (moderately limited)   ~stickiness (surface)   (moderately limited)   ~seasonal wetness   (slightly limited)		   Moderately limited  ~stickiness (surface)   (moderately limited)  ~seasonal wetness   (slightly limited) 	    0.50    0.20 	Limited  ~slope   (limited)  ~low strength   (moderately limited)  ~stickiness (surface)   (moderately limited)	0.50

Map symbol and soil name	   Hand planting 		   Mechanical planti   	ng	  Use of harvesting equ   	ipment	  Mechanical site prepa   (surface)	ration	   Roads (natural surf	ace)
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
LaB: Ladoga	    Not limited 		  Not limited 	       	  Moderately limited  ~low strength   (moderately limited)	      0.50	  Not limited 		  Moderately limited  ~low strength   (moderately limited)	0.50
LaC2: Ladoga	  Not limited 		  Slightly limited  ~slope   (slightly limited)	  0.20   	  Moderately limited  ~low strength   (moderately limited) 	  0.50     	  Not limited     		  Moderately limited  ~low strength   (moderately limited)  ~slope   (slightly limited)	0.50
LaD2: Ladoga	  Not limited 		  Moderately limited  ~slope   (moderately limited)	    0.47   	  Moderately limited  ~low strength   (moderately limited) 	    0.50   	  Not limited   		  Limited  ~slope   (limited)  ~low strength   (moderately limited)	  0.76    0.50
LbB: Ladoga	  Not limited 		  Not limited 	       	  Moderately limited  ~low strength   (moderately limited)	      0.50	  Not limited 		  Moderately limited  ~low strength   (moderately limited)	0.50
LbC2: Ladoga	  Not limited 		  Slightly limited  ~slope   (slightly limited)	    0.20   	  Moderately limited  ~low strength   (moderately limited) 	      0.50   	  Not limited   		  Moderately limited  ~low strength   (moderately limited)  ~slope   (slightly limited)	  0.50    0.15
LcC: Clarinda	  Moderately limited  ~stickiness (surface)   (moderately limited) 		   Moderately limited   ~stickiness (surface)   (moderately limited)   ~slope   (slightly limited)	İ	   Moderately limited   ~stickiness (surface)   (moderately limited)   ~low strength   (moderately limited)   ~seasonal wetness   (slightly limited)	  0.50    0.50    0.20	Moderately limited   ~stickiness (surface)   (moderately limited)   ~seasonal wetness   (slightly limited)		   Moderately limited   ~stickiness (surface)   (moderately limited)   ~low strength   (moderately limited)   ~slope   (moderately limited)	0.50

Map symbol and soil name	   Hand planting		   Mechanical planti   	ng	  Use of harvesting equ 	ipment	  Mechanical site prepa:   (surface)	ration	   Roads (natural surf 	ace)
	Rating class and limiting features	Value   	Rating class and limiting features	Value   	Rating class and limiting features	Value   	Rating class and limiting features	Value   	Rating class and limiting features	Value
LcC: (cont.) Lagonda	  Not limited 		  Slightly limited  ~slope   (slightly limited) 	        0.30       	  Moderately limited  ~low strength  (moderately limited)  ~seasonal wetness  (slightly limited)	      0.50    0.15	  Slightly limited  ~seasonal wetness   (slightly limited)   	        0.15       	   Moderately limited  ~low strength   (moderately limited)  ~slope   (moderately limited)  ~seasonal wetness   (slightly limited)	    0.50    0.30    0.15
LcC2: Clarinda	  Moderately limited  ~stickiness (surface)   (moderately limited)	    0.50   	Moderately limited  ~stickiness (surface)   (moderately limited)  ~slope   (slightly limited)	0.50	Moderately limited   ~stickiness (surface)   (moderately limited)   ~low strength   (moderately limited)   ~seasonal wetness   (slightly limited)	  0.50	   Moderately limited   ~stickiness (surface)   (moderately limited)   ~seasonal wetness   (slightly limited)	  0.50    0.20 	Moderately limited   ~stickiness (surface)   (moderately limited)   ~low strength   (moderately limited)   ~slope   (moderately limited)	0.50
Lagonda	Not limited		  Slightly limited  ~slope   (slightly limited)   	  0.30       	   Moderately limited   ~low strength   (moderately limited)   ~seasonal wetness   (slightly limited)	  0.50    0.15   	  Slightly limited  ~seasonal wetness   (slightly limited)   	  0.15         	Moderately limited   ~low strength   (moderately limited)   ~slope   (moderately limited)   ~seasonal wetness   (slightly limited)	  0.50    0.30    0.15
LcC3: Clarinda	Moderately limited  ~stickiness (surface)   (moderately limited)	    0.50     	Moderately limited   ~stickiness (surface) (moderately limited)   ~slope   (slightly limited)	0.50	Moderately limited   ~stickiness (surface)   (moderately limited)   ~low strength   (moderately limited)   ~seasonal wetness   (slightly limited)	  0.50    0.50    0.20	Moderately limited   ~stickiness (surface)   (moderately limited)   ~seasonal wetness   (slightly limited)	  0.50    0.20 	Moderately limited   ~stickiness (surface)   (moderately limited)   ~low strength   (moderately limited)   ~slope   (moderately limited)	0.50

Map symbol and soil name	   Hand planting		Mechanical planti:	ng	  Use of harvesting equ: 	ipment	  Mechanical site prepa   (surface)	ration	   Roads (natural surfa	ace)
	Rating class and limiting features	Value	Rating class and limiting features	Value   	Rating class and limiting features	Value   	Rating class and limiting features	Value	Rating class and limiting features	Value
LcC3: (cont.) Lagonda	  Not limited 		Slightly limited  -slope   (slightly limited)	      0.30     	  Moderately limited  ~low strength   (moderately limited)  ~seasonal wetness   (slightly limited)	      0.50    0.15	  Slightly limited  ~seasonal wetness   (slightly limited) 	               	   Moderately limited   ~low strength   (moderately limited)   ~slope   (moderately limited)   ~seasonal wetness   (slightly limited)	0.30
Ne: Nevin	  Not limited 		Not limited	       	  Moderately limited  ~low strength   (moderately limited)	    0.50 	  Not limited   	       	  Moderately limited  ~low strength   (moderately limited)	0.50
No: Nodaway	Not limited		Not limited	         	  Moderately limited  ~low strength   (moderately limited) 	    0.50     	  Not limited       	         	  Moderately limited  ~flooding   (moderately limited)  ~low strength   (moderately limited)	0.50
Nw: Nodaway	  Not limited   		Not limited	         	  Moderately limited  ~low strength   (moderately limited) 	    0.50     	  Not limited     	         	  Very limited  ~flooding   (very limited)  ~low strength   (moderately limited)	  1.00    0.50
OaB: Olmitz	  Not limited   		Not limited	     	  Moderately limited  ~low strength   (moderately limited)	    0.50 	  Not limited   	     	  Moderately limited  ~low strength   (moderately limited)	  0.50 

Map symbol and soil name	Hand planting		   Mechanical plant   	ing	  Use of harvesting equ:   	ipment	  Mechanical site prepa   (surface)	aration	   Roads (natural surf 	iace)
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value   	Rating class and limiting features	Value	Rating class and limiting features	Value
OkB: Olmitz	  Not limited		    Not limited   		    Moderately limited  ~low strength   (moderately limited)	      0.50	    Not limited   		    Moderately limited  ~low strength   (moderately limited)	    0.50
Kennebec	Not limited		  Not limited 		  Moderately limited  ~low strength   (moderately limited)	    0.50 	  Not limited 		  Moderately limited  ~low strength   (moderately limited)	0.50
PeB: Pershing	  Not limited		  Not limited 		  Moderately limited  ~low strength   (moderately limited)	      0.50	  Not limited 		  Moderately limited  ~low strength   (moderately limited)	0.50
PeB2: Pershing	Not limited		  Not limited 		  Moderately limited  ~low strength   (moderately limited)	    0.50	  Not limited 		  Moderately limited  ~low strength   (moderately limited)	0.50
PeC: Pershing	Not limited		  Slightly limited  ~slope   (slightly limited)	0.20	  Moderately limited  ~low strength   (moderately limited) 	    0.50   	  Not limited     		  Moderately limited  ~low strength   (moderately limited)  ~slope   (slightly limited)	  0.50    0.15
PeC2: Pershing	  Not limited		  Slightly limited  ~slope   (slightly limited)	0.20	  Moderately limited  ~low strength   (moderately limited)   	  0.50     	  Not limited     		  Moderately limited  ~low strength   (moderately limited)  ~slope   (slightly limited)	  0.50    0.15
PrB: Pershing	  Not limited 		  Not limited   		  Moderately limited  ~low strength   (moderately limited)	    0.50 	  Not limited   		  Moderately limited  ~low strength   (moderately limited)	  0.50

Map symbol and soil name	   Hand planting 		   Mechanical planti 	ng	  Use of harvesting equ: 	ipment	  Mechanical site prepa   (surface)	ration	   Roads (natural surf 	ace)
	Rating class and limiting features	Value   	Rating class and limiting features	Value   	Rating class and limiting features	Value   	Rating class and limiting features	Value   	Rating class and limiting features	Value
PrB2: Pershing	    Not limited 	       	    Not limited   	       	  Moderately limited  ~low strength   (moderately limited)	      0.50 	    Not limited   	       	  Moderately limited  ~low strength   (moderately limited)	      0.50
PrC2: Pershing	  Not limited 	         	  Slightly limited  ~slope   (slightly limited)	  0.20     	  Moderately limited  ~low strength   (moderately limited) 	  0.50   	  Not limited       	         	  Moderately limited  ~low strength   (moderately limited)  ~slope   (slightly limited)	0.50
PsC3: Grundy	  Not limited 		  Slightly limited  ~slope   (slightly limited) 	  0.20     	  Moderately limited  ~low strength   (moderately limited)  ~seasonal wetness   (slightly limited) 	  0.50    0.15 	  Slightly limited  ~seasonal wetness   (slightly limited) 	    0.15       	  Moderately limited  ~low strength   (moderately limited)  ~slope   (slightly limited)  ~seasonal wetness   (slightly limited)	  0.50    0.15    0.15
Pershing	Moderately limited  ~stickiness (surface)   (moderately limited)	  0.50     	   Moderately limited   ~stickiness (surface)   (moderately limited)   ~slope   (slightly limited)	  0.50    0.20 	   Moderately limited   ~low strength   (moderately limited)   ~stickiness (surface)   (moderately limited)	  0.50    0.50   	  Moderately limited  ~stickiness (surface)   (moderately limited)   		   Moderately limited   ~low strength   (moderately limited)   ~stickiness (surface)   (moderately limited)   ~slope   (slightly limited)	0.50
SaB: Sharpsburg	  Not limited	       	  Not limited 	       	  Moderately limited  ~low strength   (moderately limited)	    0.50 	  Not limited 	       	  Moderately limited  ~low strength   (moderately limited)	0.50
SaB2: Sharpsburg	  Not limited 	       	  Not limited   	       	  Moderately limited  ~low strength   (moderately limited)	    0.50 	  Not limited 	       	  Moderately limited  ~low strength   (moderately limited)	0.50

Map symbol and soil name	   Hand planting 		   Mechanical planti   	ng	  Use of harvesting equ   	ipment	  Mechanical site prepa   (surface)	ration	   Roads (natural surf 	ace)
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
SaC: Sharpsburg	  Not limited   		  Slightly limited  ~slope   (slightly limited) 	      0.20   	  Moderately limited  ~low strength   (moderately limited) 	      0.50   	  Not limited       		  Moderately limited  ~low strength   (moderately limited)  ~slope   (slightly limited)	    0.50    0.15
SaC2: Sharpsburg	  Not limited   		  Slightly limited  ~slope   (slightly limited) 	      0.20   	  Moderately limited  ~low strength   (moderately limited) 	      0.50     	  Not limited       		  Moderately limited  ~low strength   (moderately limited)  ~slope   (slightly limited)	  0.50    0.15
SbC: Sharpsburg	  Not limited 	     	  Slightly limited  ~slope   (slightly limited)	    0.10 	  Moderately limited  ~low strength   (moderately limited)	    0.50 	  Not limited 		  Moderately limited  ~low strength   (moderately limited)	0.50
SgC3: Sharpsburg	  Moderately limited  ~stickiness (surface)   (moderately limited)	  0.50     	   Moderately limited   ~stickiness (surface)   (moderately limited)   ~slope   (slightly limited)	0.50	   Moderately limited   ~stickiness (surface)   (moderately limited)   ~low strength   (moderately limited)	  0.50    0.50 	  Moderately limited  ~stickiness (surface)   (moderately limited)   		   Moderately limited   ~stickiness (surface)   (moderately limited)   ~low strength   (moderately limited)   ~slope   (slightly limited)	0.50
ShD: Shelby	  Not limited 		  Moderately limited  ~slope   (moderately limited) 		  Moderately limited  ~low strength   (moderately limited)   	    0.50     	  Not limited         		Limited  -slope   (limited)  -low strength   (moderately limited)	  0.76    0.50

Map symbol and soil name	   Hand planting		Mechanical planting		Use of harvesting equipment		  Mechanical site preparation   (surface)		Roads (natural surface)	
	Rating class and limiting features	Value   	Rating class and limiting features	Value   	Rating class and limiting features	Value   	Rating class and limiting features	Value	Rating class and limiting features	Value
ShD2: Shelby	  Moderately limited  ~stickiness (surface)   (moderately limited)	      0.50     	  Moderately limited  ~stickiness (surface)  (moderately limited)  ~slope  (moderately limited)	1	  Moderately limited  ~low strength   (moderately limited)  ~stickiness (surface)   (moderately limited)	      0.50    0.50	  Moderately limited  ~stickiness (surface)   (moderately limited) 	  0.50       	Limited  ~slope (limited)  ~low strength (moderately limited)  ~stickiness (surface) (moderately limited)	    0.76    0.50    0.50
ShE: Shelby	  Slightly limited  ~slope   (slightly limited)	    0.04   	  Limited  ~slope   (limited) 	1	  Moderately limited  ~low strength   (moderately limited)  ~slope   (slightly limited)	    0.50    0.15	  Slightly limited  ~slope   (slightly limited) 	  0.15   	  very limited  ~slope   (very limited)  ~low strength   (moderately limited)	  1.00    0.50
ShE2: Shelby	  Moderately limited  ~stickiness (surface)   (moderately limited)  ~slope   (slightly limited)	  0.50    0.04 	  Limited  ~slope   (limited)  ~stickiness (surface)   (moderately limited)	0.68	Moderately limited   ~low strength   (moderately limited)   ~stickiness (surface)   (moderately limited)   ~slope   (slightly limited)	  0.50    0.50    0.15	   Moderately limited   ~stickiness (surface)   (moderately limited)   ~slope   (slightly limited)	0.50    0.15 	Very limited  ~slope   (very limited)  ~low strength   (moderately limited)  ~stickiness (surface)   (moderately limited)	  1.00    0.50    0.50
ShF: Shelby	  Slightly limited  ~slope   (slightly limited) 	  0.14   	  Limited  ~slope   (limited) 	    0.99     	  Moderately limited  ~slope   (moderately limited)  ~low strength   (moderately limited)	  0.60    0.50	  Moderately limited  ~slope   (moderately limited)   	0.60     	  Very limited  ~slope   (very limited)  ~low strength   (moderately limited)	  1.00    0.50

Map symbol and soil name	Hand planting		Mechanical planti 	ng	Use of harvesting equ	ipment	Mechanical site prepa:   (surface)	ration	Roads (natural surf	,	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	
SrE3: Gara	   Moderately limited   ~stickiness (surface)   (moderately limited)   ~slope   (slightly limited)		   Moderately limited  ~slope   (moderately limited)  ~stickiness (surface)   (moderately limited)	ĺ	   Moderately limited   ~low strength   (moderately limited)   ~stickiness (surface)   (moderately limited)   ~slope   (slightly limited)	0.50	   Moderately limited   ~stickiness (surface)   (moderately limited)   ~slope   (slightly limited)		  Limited  ~slope   (limited)  ~low strength   (moderately limited)  ~stickiness (surface)   (moderately limited)	0.50	
Shelby	Moderately limited  ~stickiness (surface)   (moderately limited)  ~slope   (slightly limited)	  0.50    0.01 	  Moderately limited  ~slope   (moderately limited)  ~stickiness (surface)   (moderately limited)	ĺ	Moderately limited   ~low strength   (moderately limited)   ~stickiness (surface)   (moderately limited)   ~slope   (slightly limited)	  0.50    0.50    0.05	Moderately limited  ~stickiness (surface)   (moderately limited)  ~slope   (slightly limited)	1	Limited  ~slope  (limited)  ~low strength  (moderately limited)  ~stickiness (surface)  (moderately limited)		
Te: Keswick	  Not limited 		  Moderately limited  ~slope   (moderately limited)   	    0.47     	  Moderately limited  ~low strength   (moderately limited)  ~seasonal wetness   (slightly limited) 	  0.50    0.20 	  Slightly limited  ~seasonal wetness   (slightly limited)   	  0.20       	  Limited  ~slope   (limited)  ~low strength   (moderately limited)  ~seasonal wetness   (slightly limited)	  0.76    0.50    0.20	
W: Water	  Not rated 	     	  Not rated 	     	  Not rated 	     	  Not rated 	     	  Not rated 		
Wa: Wabash	  Limited  ~stickiness (surface)  (limited)  ~seasonal wetness   (moderately limited)	  0.60	Limited  -stickiness (surface)   (limited)  -seasonal wetness   (moderately limited)	    0.75    0.60   	Limited  -seasonal wetness   (limited)  -stickiness (surface)   (limited)  -low strength   (moderately limited)	0.50	Limited  -seasonal wetness   (limited)  -stickiness (surface)   (limited)	      0.91    0.75   	Limited  -seasonal wetness   (limited)  -stickiness (surface)   (limited)  -flooding   (moderately limited)	0.60	

Map symbol and soil name	   Hand planting 		   Mechanical planting   		Use of harvesting equipment		  Mechanical site preparation   (surface)		Roads (natural surface)	
	Rating class and limiting features	Value	Rating class and limiting features	Value   	Rating class and limiting features	Value   	Rating class and limiting features	Value   	Rating class and limiting features	Value
Wb: Wabash	Moderately limited  ~seasonal wetness   (moderately limited)  ~stickiness (surface)   (moderately limited)	0.50	Moderately limited  ~seasonal wetness   (moderately limited)  ~stickiness (surface)   (moderately limited)	0.60    0.50	Limited  ~seasonal wetness   (limited)  ~stickiness (surface)   (moderately limited)  ~low strength   (moderately limited)	    0.91  0.50    0.50	Limited  ~seasonal wetness   (limited)  ~stickiness (surface)   (moderately limited)	          0.50     	  Limited  ~seasonal wetness  (limited)  ~flooding  (moderately limited)  ~stickiness (surface)  (moderately limited)	0.50